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APPENDIX E
ENVIRONMENTAL JUSTICE

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1.0 INTRODUCTION

In accordance with congressional authorization, the Rankin-Hinds Pearl River Flood and Drainage Control District (RHPRFDCD) is completing the Preliminary Feasibility Study and Draft Environmental Impact Statement, (FS/EIS) dated February 2007, for the purpose of identifying the Federal interest in the Pearl River Watershed, Mississippi, in accordance with the Economic and Environmental Principals and Guidelines (P&G) for Water Related Land Resources, and the Planning Guidance Notebook, ER-1105-2-100. This FS/EIS is being conducted per authorization of Water Resources Development Act (WRDA) 2007 Section 3104 to authorize and construct the National Economic Development (NED) plan, the locally preferred plan (LLP) or some combination thereof.

This FS/EIS has been undertaken in accordance with the National Environmental Policy Act (NEPA) of 1969 Council on Environmental Quality, and USACE regulations for implementing NEPA.

A levee system was constructed in the 1960's to help reduce flood damages for a portion of the Jackson Metropolitan area. This levee system consisted of levees, pumps, and channelization work. This levee system has been effective in flood reduction for areas protected by this system, although the west levee was compromised during the 1979 flood of record. Since this flood of record, numerous attempts to develop a feasible and reliable alternative have failed to gain support from state and local leadership or from the local community. The existing protection that was compromised in the 1979 flood only provides protection of approximately 30% of the \$1.4 billion in structure values within the area at risk.

The study area is presented in Figure 1. This environmental justice analysis studied whether any human health or environmental effects associated with the Flood Control Project disproportionately affect minority or low-income persons identified in the study area.

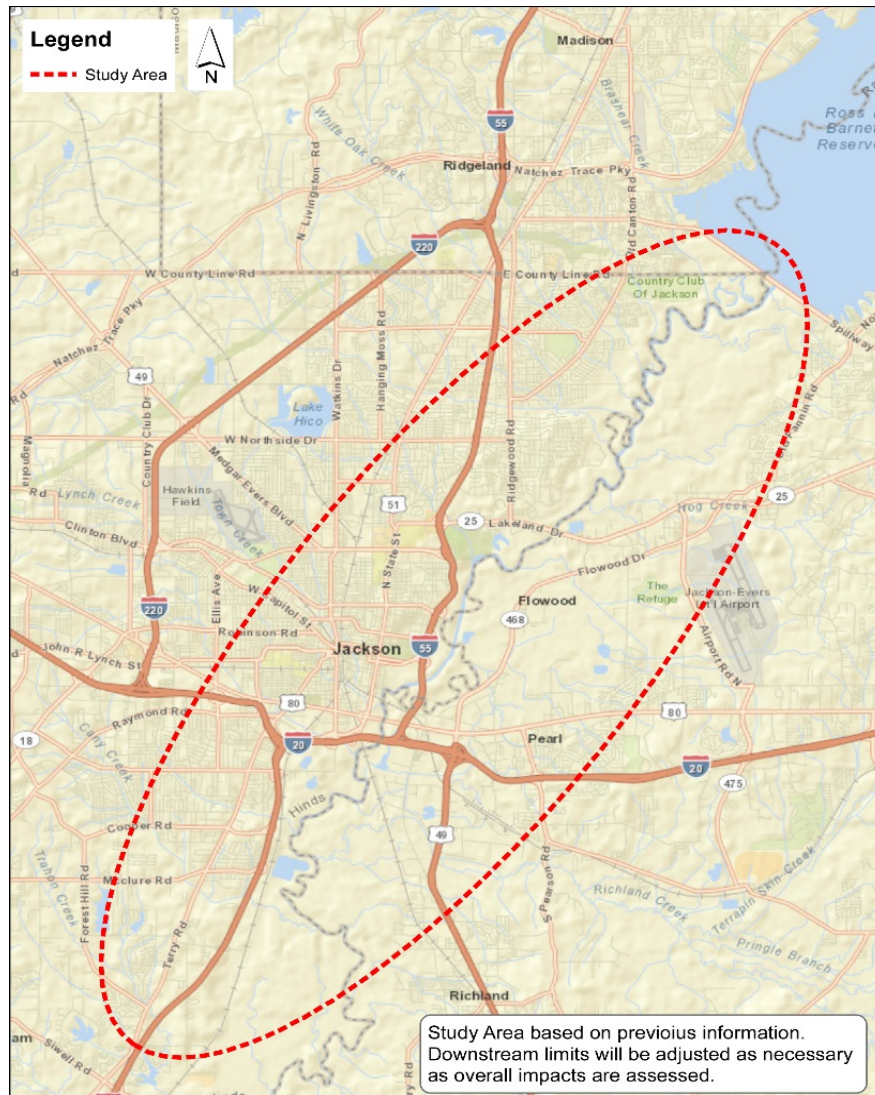


Figure 1, Study Area

“Environmental justice” is the fair treatment and meaningful involvement of all people – regardless of race, color, national origin, culture, education, or income – in the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no racial, ethnic, or socioeconomic group should bear a disproportionate share of adverse effects as a result of the execution of Federal, State, local, and tribal environmental programs and policies (EPA 2011). Environmental justice concerns are also applicable to Federal plans, functions, programs and resources. 42 U.S.C. §4331(b). Meaningful involvement means that:

- Potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that affect their environment or health.
- The public’s contribution can influence the regulatory agency’s decision.

- The concerns of all participants are considered in decision-making process.
- Decision makers seek out and facilitate the involvement of those potentially affected.

Executive Order 12898, “*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*,” February 1994, requires each Federal agency to consider environmental justice issues in its programs, policies and actions. Each agency is required to address disproportionate adverse effects of its activities on race, color, national origin, culture, education and/or income, including minority and low-income populations--which are the only categories identified in this project area. Hence, in compliance with this Executive Order, the potential effects of the alternatives on any minority and/or low-income populations in the project area were evaluated.

The study area includes parts of Hinds and Rankin counties including the major tributaries of the Pearl River most affected by headwater flooding. The primary focus of the study is along the Pearl River and its tributaries particularly those areas most prone to flooding in the Jackson Metropolitan area. The population of the project area was analyzed by racial demographics and poverty level statistics produced by the most recently available U. S. Census data. Census tracts within the project area are shown in Table 4.

2.0 MINORITY AND/OR LOW-INCOME POPULATIONS

The project area does include minority populations including the residential subdivisions of Hightower and River Road and a commercial/industrial area in south downtown Jackson in the vicinity of Town Creek.

Data gathered from existing 2010 Census data bases was used for this analysis. According to the 2010 U.S. Census, the area within the Region of Influence (ROR) of the project area does include minority populations and low-income populations, as presented in Table 1 (minority populations) and Table 3 (low-income populations) for Hinds and Rankin Counties.

Table 1: Race and ethnicity in Hinds and Rankin counties(%), 2010

	Hinds County											Rankin County							Mississippi
	Bolton	Byram	Clinton	Edwards	Jackson	Learned	Raymond	Terry	Utica			Brandon	Flowood	Pearl	Pelahatchie	Puckett	Richland	Robinhood	
White	26.28	45.67	60.13	15.47	18.42	91.49	44.59	38.85	27.44			80.60	75.24	69.84	61.92	98.42	78.79	92.90	59.13
Black	73.37	52.14	33.88	82.69	79.37	5.32	53.65	59.27	64.15			16.86	18.60	22.99	32.83	0.32	14.45	1.99	37.02
American Indian	0	0.22	0.22	0.68	0.14	0	0.21	0.19	0.12			0.18	0.19	0.23	0.07	0	0.23	0.93	0.51
Asian	0	0.84	4.08	0.10	0.39	1.06	0.36	0.28	0			0.98	3.77	0.86	0.22	0.32	1.68	0.19	0.87
Pacific Islander	0	0.01	0.02	0	0.02	0	0.10	0	0.73			0.06	0	0.21	0	0	0.14	0	0.04
Other Race	0	0.28	0.67	0.48	0.75	0	0.10	0.47	7.32			0.52	0.88	4.16	3.82	0	3.66	1.93	1.29
Reporting Two or more Races	.35	0.85	1.00	0.58	0.91	2.13	0.98	0.94	0.24			0.80	1.32	1.71	1.12	0.95	1.04	2.06	1.15
Total Hispanic Population	0.18	1.06	1.48	0.87	1.57	0	1.24	0.66	8.66			1.65	2.36	6.37	5.47	0.63	5.37	4.05	2.75

Source: CMPDD

As discussed in more detail in the main report, a portion of the City of Jackson, including a portion of downtown Jackson, is part of the study area. Land uses within this portion of the study area include diverse land uses including residential, commercial and industrial land uses.

Low-income Populations

Low income populations are based on the Department of Health and Human Services (DHHS) 2013 Federal Poverty Guidelines. The 2010 U.S. Census indicates that the project area does include low-income individuals/families including the residential subdivisions of Hightower, Galilee, Patience Hendricks, and River Road and a commercial/industrial area in south downtown Jackson in the vicinity of Town Creek. Table 2 displays the 2013 Poverty Guidelines as set forth by DHHS, and Table 3 presents the annual income for Hinds and Rankin Counties based on the 2016 projections.

Table 2: Federal Poverty Guidelines , 2013

2013 POVERTY GUIDELINES FOR THE 48 CONTIGUOUS STATES AND THE DISTRICT OF COLUMBIA	
Persons in family/household	Poverty guideline (annual income)
1	\$11,490
2	15,510
3	19,530
4	23,550
5	27,570
6	31,590
7	35,610
8	39,630
For families/households with more than 8 persons, add \$4,020 for each additional person.	

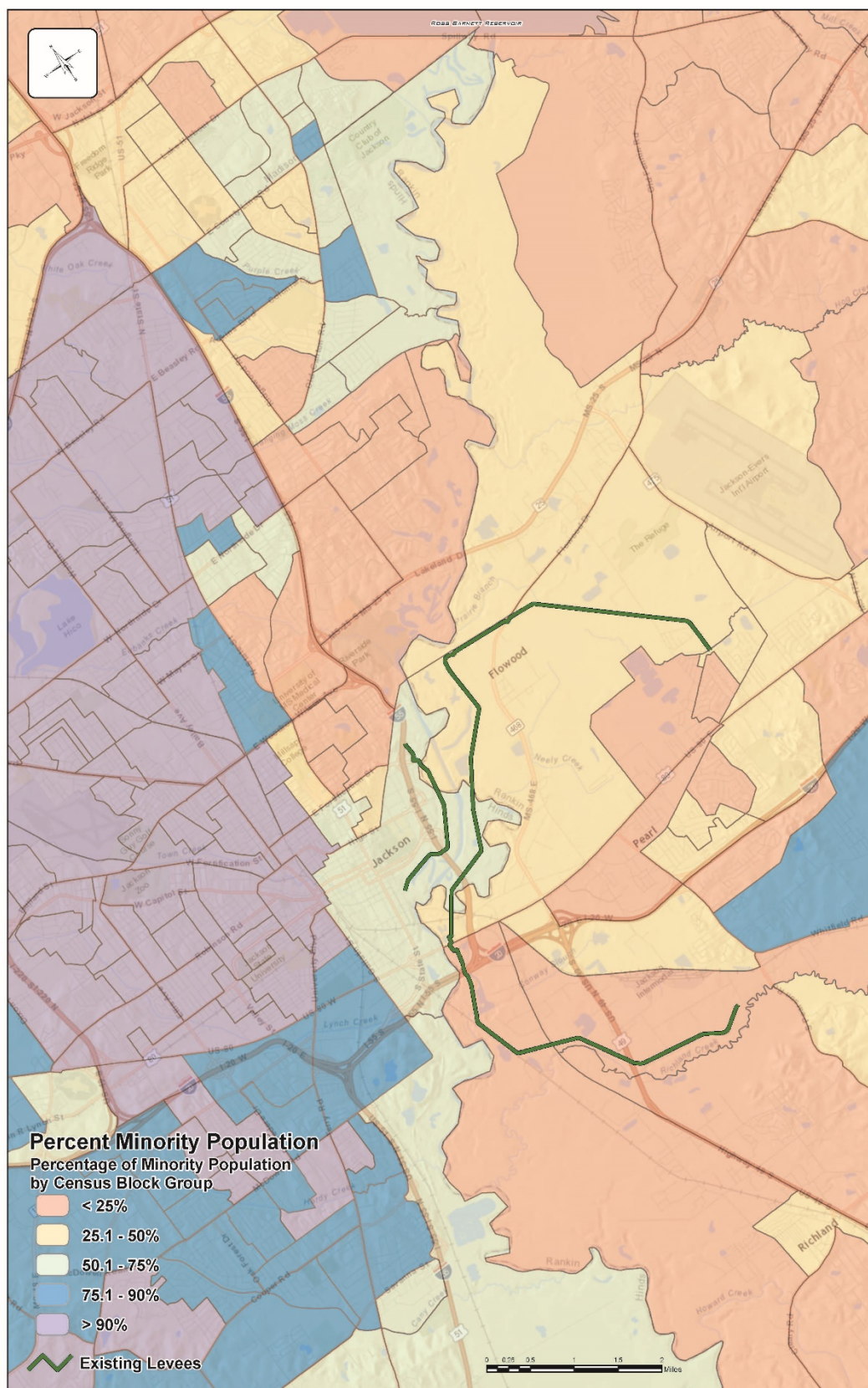
Table 3: Annual Income (%), 2016 Projection

Income Range	Hinds									Rankin						
	Bolton	Byram	Clinton	Edwards	Jackson	Learned	Raymond	Terry	Utica	Brandon	Florence	Flowood	Pearl	Pelahatchie	Puckett	Richland
< \$15,000	22.8	5.0	7.4	27.5	19.8	17.1	15.4	19.9	22.0	8.5	10.1	13.5	12.6	16.4	17.6	11.7
\$15,000 - \$24,999	15.8	4.9	6.1	12.8	11.3	5.7	8.3	8.3	11.1	4.6	7.4	4.3	10.1	10.1	7.4	9.5
\$25,000 - \$34,999	9.2	6.1	6.4	10.3	10.2	11.4	6.6	13.5	8.1	6.2	7.8	8.8	11.2	10.3	14.0	9.5
\$35,000 - \$49,999	11.0	13.1	13.5	14.1	13.7	20.0	12.6	11.6	20.6	10.7	13.6	16.6	14.7	18.9	17.6	13.4
\$50,000 - \$74,999	14.9	27.3	27.9	19.6	21.6	25.7	27.1	20.6	21.3	25.3	28.4	21.6	25.3	20.5	24.3	29.9
\$75,000 - \$99,999	13.6	24.3	19.4	7.3	11.0	11.4	16.8	13.0	7.4	19.7	17.3	15.1	14.2	13.3	12.5	14.5
\$100,000 - \$149,999	7.5	16.0	13.7	5.5	7.2	8.6	8.7	8.3	7.1	17.2	11.8	13.0	9.0	7.0	2.9	9.1
\$150,000 - \$199,999	1.8	1.8	3.3	2.0	2.4	0.0	2.8	2.1	1.7	4.9	2.1	4.0	2.2	2.1	3.7	1.4
\$200,000 +	3.5	1.5	2.3	0.8	2.7	0.0	1.7	2.6	0.7	2.8	1.6	3.1	0.7	1.4	0.0	1.0
Source: CMPDD and DHSS																

Using a typical family household of 4 to 5 persons, the annual per household income at the poverty guideline can be assumed to be approximately \$25,000 according to Table 2 above. Therefore, according to Table 3, approximately 31% of Jackson households, 18% of Flowood households, 23% of Pearl households, and 21% of Richland households are below the federal poverty guideline.

3.0 AREA OF INFLUENCE

Demographic data describing populations within the area of influence are presented on Figure 2 using 2010 Census Data. To conduct the analysis of impacts, an area of influence was defined. One (1) mile and Two (2) mile radii from the project location are shown on Figure 5. As can be seen, minority populations are present throughout Hinds County. As previously mentioned, this is a proposed flood reduction project for the Jackson metropolitan area. In addition to the minority populations, residential structures identified for flood reduction benefits in minority census tracts are within 3 distinct locations that are greater than 50% minority. The structures presented are located within the floodplain of the Pearl River.



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Figure 2, Percent Minority Population in Study Area

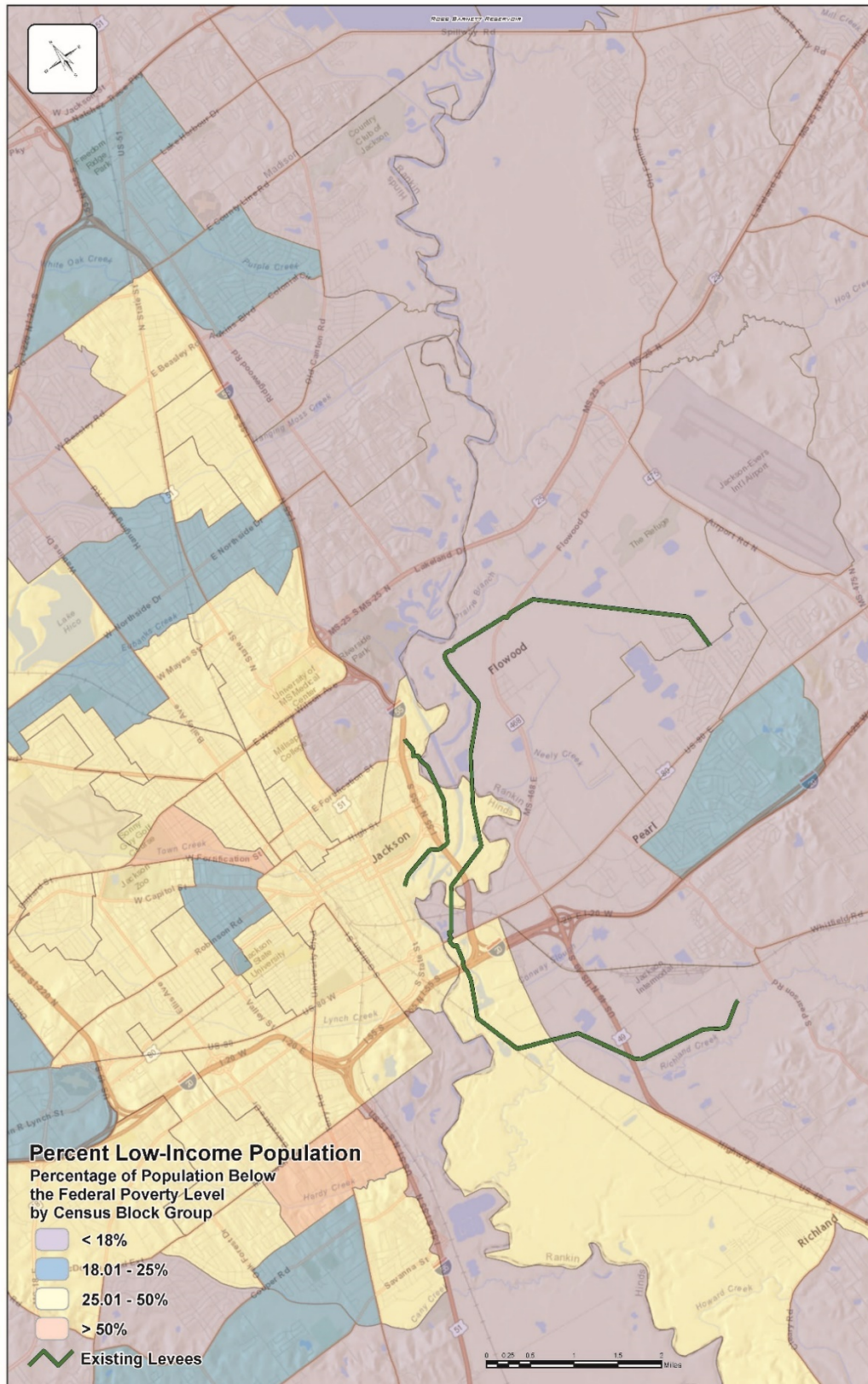


Figure 3, Percent Low Income Population

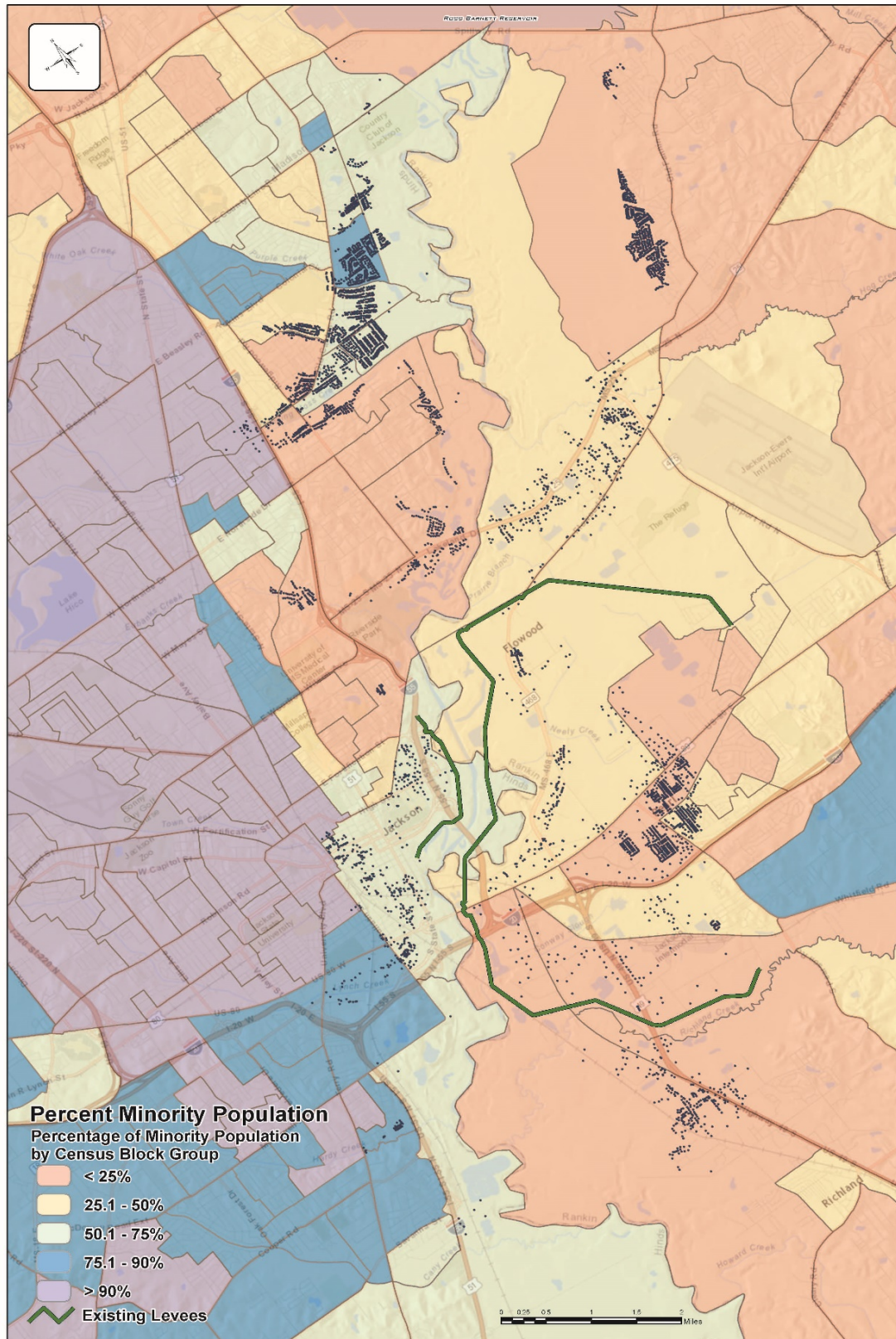


Figure 4, Commercial and Residential Finish floors surveyed in Study Area

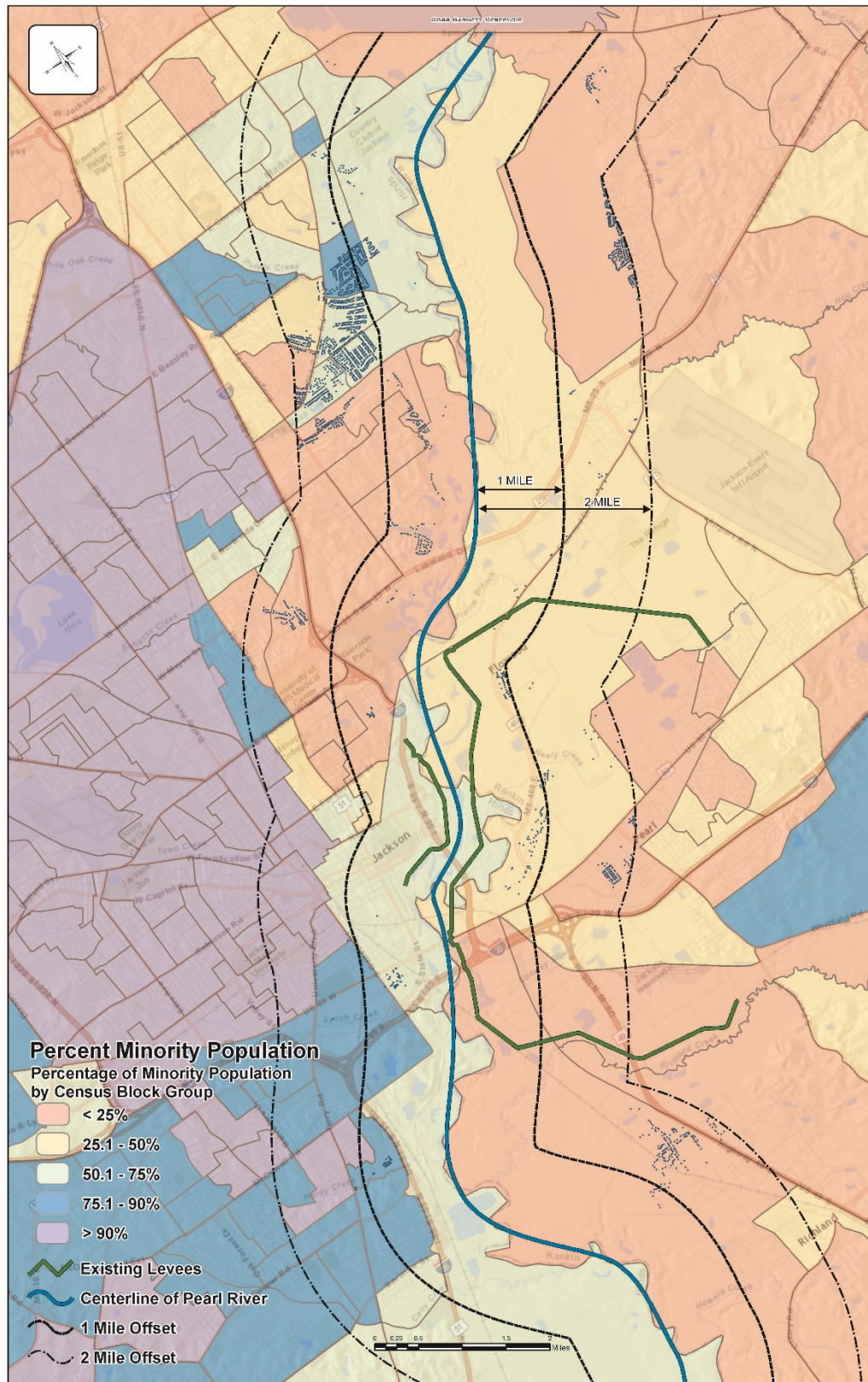


Figure 5, 1 Mile and 2 Mile radius from proposed Project Area

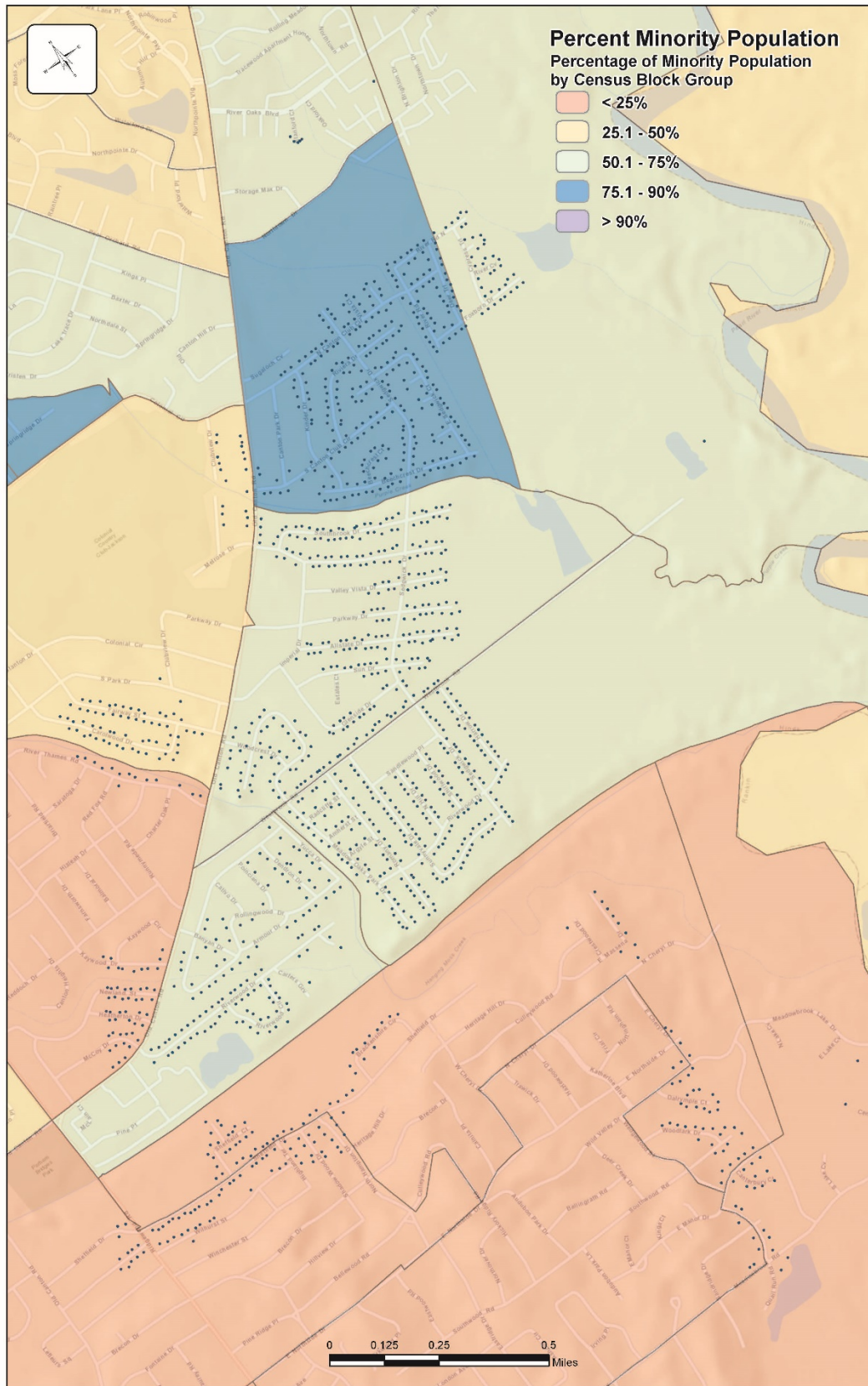


Figure 6, Residential structures in minority areas of northeast Jackson receiving flood damage benefits

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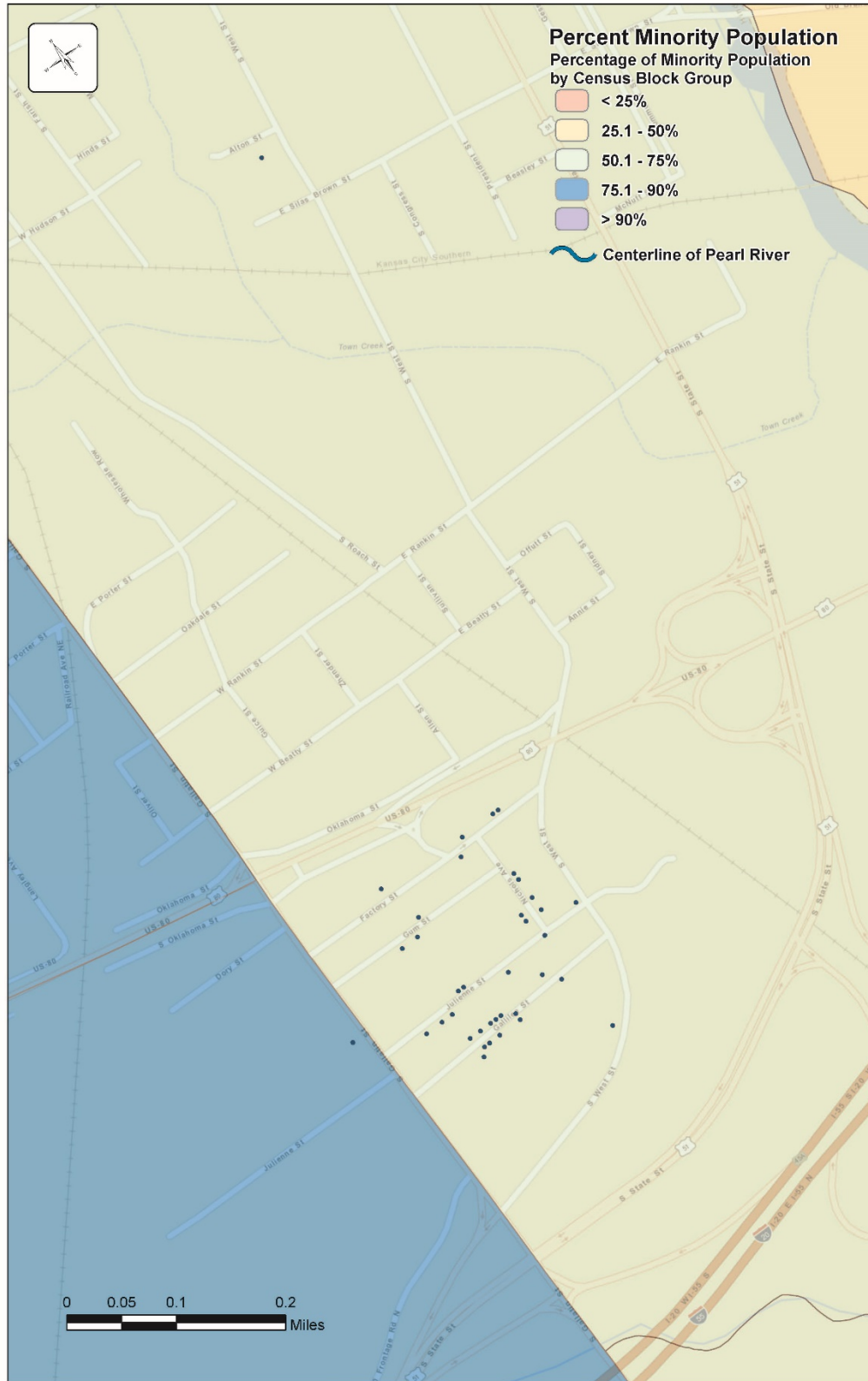


Figure 7, Residential Structures in the Hightower neighborhood receiving flood damage benefits

4.0 ENVIRONMENTAL CONSEQUENCES

This section evaluates the potential effect of the proposed alternatives on the environmental justice concerns in the project area.

Significance Criteria

CEQ guidance provides relevant thresholds for identification of environmental justice effects to the extent practicable when determining whether environmental effects are disproportionately high and adverse (Council on Environmental Quality 1997:26-27).

- Whether there is or would be an impact on the natural or physical environment that significantly and adversely affects a minority population, or a low-income population. Such effects may include ecological, cultural, human health, economic, or social impacts on minority communities, low-income communities, or Indian tribes when those impacts are interrelated to impacts on the natural or physical environment.
- Whether the environmental effects are significant and are or may be having an adverse impact on minority populations, or low-income populations, which appreciably exceeds or is likely to appreciably exceed those on the general population or other appropriate comparison group.
- Whether the environmental effects occur or would occur in a minority population or low-income population affected by cumulative or multiple adverse exposures from environmental hazards.

Census Tracts with Environmental Justice Considerations

The following census tracts within the project's area of effect contain a higher percentage of minority and/or low-income populations when compared to those in other areas of Hinds and Rankin counties:

Table 4: Census Tracts with High Minority Percentage, 2013

Census Tract	Total Count	White	Black	Other
5010, 5011, 5013, 5006, 5014	455	66	384	5
1004, 1005, 1000, 5007, 5005	401	252	139	10
5004, 5003, 5005, 4002	140	32	103	5

No-Action Alternative

The project area impacted by this alternative includes residential, commercial, schools, and hospitals, which include populations of all races (minority and non-minority) and all income levels (low, middle and high). Without implementation of a Federal flood control project, flooding would continue to affect all populations living in the Pearl River flood plain, with the Northeast Jackson area being exposed to the potential for the greatest amount of economic damages. The three areas identified with environmental justice concerns flood more frequently than in response to an annual 1% chance exceedance flood event; for example, these areas also experience flooding in response to an annual 4% or 2% chance exceedance flood event. In fact, an area in south downtown Jackson floods even more often due to the flooding that occurs along Town Creek. Under the No Action Alternative, while the Northeast Jackson area currently faces the highest risk of realizing economic damages from flooding, the risks would not change throughout the project area when compared to existing conditions. Under the No Action Alternative, construction of the Tentatively Selected Plan (Alternative C) would not occur. As a result, there would be no project related impacts to environmental justice communities in the Project Area, just as there would be no such project-related impacts to the Project Area as a whole.

However, the No Action Alternative would continue existing adverse effects on human health, economic and social issues throughout the Project Area, which would directly and indirectly affect environmental justice communities in the Project Area. Without a flood reduction project, areas (both environmental justice and non-environmental justice areas) historically subjected to headwater flooding of the Pearl River will continue to experience flood events, including the aforementioned environmental justice areas that flood more frequently than do surrounding areas. As the Project Area's population continues to grow, potential damages and adverse impacts from flood events will continue to increase.

Non-structural Alternative

The project area impacted by this alternative includes residential, commercial, schools, and hospitals, which include populations of all races (minority and non-minority) and all income levels (low, middle and high). This alternative involves relocating structures by buying the land upon which the structures are located, with the exception of structures located behind existing levees. The total number of structures to be relocated in this alternative would be in excess of 3,100. The structures subject to buy-out are determined by mapping the area over which the river naturally flows at specific flood stages. It includes the buy-out

of *all structures* in the areas over which floodwaters flow, irrespective of race or income level, except for those structures behind existing levees.

Many structures that impact quality of life and community cohesion are impacted in multiple areas with this alternative. In addition, major transportation routes, airports and rail lines would be impacted resulting in impacts with respect to those services. Further, flood risk would not be reduced for existing structures currently protected by the existing levees, and no risk reduction improvement would be realized at the \$300 Million Wastewater Treatment Plan that serves the area.

Since buyouts are proposed for all structures located in areas over which floodwaters naturally flow at specific flood stages, except for structures located behind existing levees, similar impacts occur to all areas bought out, regardless of race or income level. Furthermore, of the approximately 2,000 structures proposed for buy-out, only 295 are located in areas with environmental justice concerns. Hence this alternative would not have a disproportionate effect on minority or low-income populations. Environmental justice effects would be less than significant, but as noted above, impacts would be experienced in areas bought out.

Levee Alternative

The project area impacted by this alternative includes residential, commercial, industrial, schools, and hospitals, which serve populations of all races (minority and non-minority) and all income levels (low, middle and high). Additional levees would improve flood risk reduction in unprotected areas and improve risk reduction in already protected areas. Although flood risk reduction is improved, there is still a risk of overtopping or failure in levee sections during extreme events. This alternative would require the relocation/condemnation of thirty properties.

Since new levees are proposed for construction in areas most impacted by flooding regardless of race or income levels, this alternative would not have a disproportionate effect on minority or low-income populations. Therefore, environmental justice effects would be less than significant, but as noted above, impacts would occur due to construction of new levees.

Channel Improvements Alternative.

The project area impacted by this alternative includes residential, commercial, schools, and hospitals, which include populations of all races (minority and non-minority) and income levels (low, middle and high).

1 This alternative would consist of excavating the overbanks of the channel in those areas which experience
2 flooding most often. In addition, levees would be relocated in some areas to further reduce flood levels.

3 Flood Risk reduction projects typically have some relocation needed to provide the most benefit. This
4 alternative does not propose condemnation of any areas including minority and/or low income areas.
5 However, it would propose voluntary buy-outs in areas most prone to flooding. Regardless of the potential
6 option of voluntary buy-outs, all communities within the project area will receive some level of flood
7 reduction benefit.

8 Several areas that are expected to continue to experience flooding during flood events similar to the 1979
9 Flood Event and an annual 1% chance exceedance flood event are specifically addressed below. These
10 areas will experience significant reductions in flooding during flood events less than an annual 1% chance
11 exceedance flood event.

12 The Hightower Subdivision is a predominately minority residential community consisting of 32 occupied
13 homes located south of Highway 80, East of Gallatin Street, and west of West Street in Jackson,
14 Mississippi. With construction of this alternative, homes in this community are expected to continue to
15 experience flooding during significant flood events similar to the 1979 Flood and an annual 1% chance
16 exceedance flood event and more frequently as demonstrated by flooding impacting the neighborhood 7
17 times since the 1979 flood. However, this community will experience significant reductions in flooding
18 during these an annual 4% and 2% chance exceedance flood events. For example, during an annual 2%
19 chance exceedance flood event, 11 structures would experience flooding with the construction of this
20 alternative, while 29 structures would experience flooding without this alternative. In addition, voluntary
21 buy-outs will be proposed in this area. A visual inspection of this area revealed numerous vacant lots,
22 abandoned homes and vehicles and unauthorized waste dumps. Hinds County tax records reflect that the
23 State and the City own a number of lots/homes in this area.

24 The River Road Subdivision is a predominately minority residential subdivision (73% African American
25 2010 Census) consisting of 48 homes located east of Old Canton Road, southeast of Northtown Drive and
26 north of Westbrook Road in North Jackson. With construction of this alternative, all homes in this
27 community are expected to continue to experience flooding during a significant flood event similar to the
28 1979 Flood and an annual 1% chance exceedance flood event. However, this community is expected to
29 experience significant reductions in flooding with construction of this alternative during annual 4% or 2%
30 chance exceedance flood events. For example, during an annual 4% chance exceedance flood event, 23

1 structures will experience flooding with the construction of this alternative, while the entire subdivision
2 will experience flooding without this alternative. In addition, voluntary buy-outs will be proposed in this
3 area.

4 To the southwest of River Road Subdivision is the Canton Avenue Estates subdivision. The Census tracts
5 for areas impacted by flood events in this subdivision are majority African American (84% according to
6 the 2010 Census). Several homes in this neighborhood will also experience benefits with this Alternative
7 during annual 4% and 2% chance exceedance flood events but will continue be at risk with annual 1%
8 chance exceedance flood events. Accordingly, those homes will be included in a voluntary buy-out
9 program.

10 Also in this section of Jackson is a neighborhood south of Westbrook Road, which is not a majority minority
11 population (34% African American according to the 2010 Census), and includes numerous homes that will
12 be impacted by a significant flood event similar to the 1979 Flood or an annual 1% chance exceedance
13 flood event. However, these homes will experience a flood reduction during the annual 4% or 2% chance
14 exceedance flood events from this alternative and will also be included in any voluntary buy-out programs.

15 An area in downtown Jackson, described approximately as beginning at a point at the intersection of
16 Highway 80 and South State Street, then running north along South State Street to Silas Brown Street,
17 thence running west along Silas Brown Street to West Street, thence running north along West Street to
18 South Street, then running west along South Street to Roach Street, thence running south along Roach Street
19 to Rankin Street, thence running due south (by compass) to Beatty Street, thence running west along Beatty
20 Street to Allen Street, thence running south along Allen Street to Highway 80, thence running east along
21 Highway 80 to point of beginning, contains all commercial/industrial structures. No residences were
22 observed, although many of the small businesses in the area are minority-owned. In addition, many
23 abandoned structures and vehicles were observed along with unauthorized waste dumps. This area is
24 expected to continue to experience flooding during a flood event similar to the 1979 Flood and an annual
25 1% chance exceedance flood event after the construction of this alternative. This area also experiences
26 more frequent flooding than other areas as a result of flooding in Town Creek, and accordingly, the business
27 owners have developed their own response plans to Town Creek Flooding. However, this area is expected
28 to experience reductions in flooding during annual 4% and 2% chance exceedance flood events with
29 construction of this alternative. Furthermore, many of the commercial properties will also gain flood
30 protection from an annual 1% chance exceedance event from this alternative. In addition, voluntary buy-

outs will be offered in this area as well. The City of Jackson has indicated a revitalization/redevelopment project in response to this Alternative may be proposed for this area which will help clean up the unauthorized waste sites and abandoned structures and vehicles. Under this alternative, during redevelopment of the area, new structures would only have to be raised 1-2 feet above current grade to be protected from an annual 1% chance exceedance flood event.

In conclusion, the Channel Improvement Alternative does not have a disproportionate effect on minority or low-income populations. Therefore, environmental justice effects would be less than significant.

Direct impacts such as air, noise, and other health risks were analyzed. Due to setback of residential areas from the proposed project construction areas, health risks associated with air quality, noise, or other health risks would not impact the areas as described within the project area.

Implementation of the project would not adversely impact public transportation or transportation routes during construction due to location of construction activities as shown on Figure 5. Construction will be located along the river and access to the river will not impact major transportation routes, public utilities, or public services.

5.0 PUBLIC PARTICIPATION

To encourage public participation during the planning process, a Notice of Intent (NOI), informing the public of the FE/EIS was published in the Federal Register on July 25, 2013. The NOI included a description of the proposed action, and the name and address of the agency contact person. In addition to the Federal Register, the local newspaper (Clarion Ledger) also published the notice of the public participation meeting. Also, multiple local news media outlets broadcast the meeting time and location.

The purpose of the re-scoping process was to provide the public with an opportunity to obtain information regarding the flooding issues and to solicit public comments on issues or concerns to be addressed in the FS/EIS. The public had several opportunities to obtain information and submit comments including group meetings, public meetings, and the project web site: www.pearlrivervisionms.com. The public was also invited to submit a survey specifically designed to identify resources currently utilized and future resource opportunities within the project area.

The public re-scoping meeting was held at the Agriculture Museum in Jackson, MS on August 29, 2013, a location convenient for all populations in the project area. The public re-scoping meeting aimed to provide an overview of the FS/EIS study, to identify project purpose and need and preliminary measures, and to

1 describe the NEPA process. Over 150 people attended the meeting and were provided the opportunity to
2 deliver verbal and/or written comments.

3 **6.0 SUMMARY**

4 The environmental justice analysis concluded that the Channel Improvement Alternative (Alternative C)
5 would not have a disproportionate effect on minority or low-income populations. Therefore, environmental
6 justice effects would be less than significant. In addition, the Channel Improvement Alternative
7 (Alternative C) is expected to have the least impacts and the greatest flood reduction benefit of the
8 alternatives addressed.

